

Value Based Healthcare. A Strategy for the Cost and Clinically Effective Healthcare System Operation

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Abstract

Purpose: The submitted article focuses on how to solve the problems faced by the European healthcare systems.

Design/Methodology: The article consists of two sections. The first one is theoretical and presents interdisciplinary achievements of researchers. The second section includes examples of solutions applied in Sweden, Germany and Great Britain. In the theoretical part, books and articles on the methodology of VBHC creation were reviewed. The empirical part is based on reports on the introduction of VBHC.

Findings: The desire to improve cost and clinical effectiveness indicates the need for a value-based healthcare (VBHC). Thus, the concept of VBHC should contribute, according to experts, economists as well as finance and management specialists, to the economic efficiency and clinical effectiveness.

Research limitations/implications: Unfortunately, this is a lengthy process to be preceded by many activities. Healthcare registers and databases belong to the most important ones. Thanks to them, it is possible to create the key performance indicators (KPI) allowing for a rational health policy.

Original value: To the achievements contained in the publications, the submitted article adds the need to take into account appropriately selected KPIs analyzing the macroeconomic environment for the functioning of hospitals.

Keywords: clinical effectiveness, cost-effectiveness, value-based healthcare, healthcare expenditure, health status, key performance indicators.

JEL: I10, I18

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Ochrona zdrowia oparta na wartości. Strategia efektywnego kosztowo i klinicznie funkcjonowania systemu ochrony zdrowia

Streszczenie

Cel: przedłożony artykuł koncentruje się na celu, jakim jest rozwiązanie problemów, na jakie napotykają europejskie systemy ochrony zdrowia.

Konstrukcja/Metodyka: artykuł składa się z dwóch części. Pierwsza z nich ma charakter teoretyczny i przedstawia interdyscyplinarny dorobek badawczy. Druga część zawiera przykłady rozwiązań wdrożonych w Szwecji, Niemczech i Wielkiej Brytanii. W pierwszej części dokonano przeglądu monografii i artykułów poświęconych metodyce tworzenia VBHC. Część empiryczna oparta jest na raportach przedstawiających wprowadzanie VBHC.

Wyniki: chęć poprawy efektywności kosztowej i klinicznej skuteczności wskazuje na potrzebę wdrożenia VBHC. Koncepcja VBHC powinna zatem przyczynić się, zdaniem ekspertów, ekonomistów oraz specjalistów od finansów i zarządzania do poprawiania efektywności ekonomicznej i skuteczności klinicznej.

Ograniczenia/implikacje badawcze: niestety jest to długotrwały proces poprzedzony wieloma czynnościami. Do najważniejszych z nich należy stworzenie rejestrów medycznych i baz danych. Dzięki nim możliwe jest tworzenie kluczowych wskaźników działalności (KPI) pozwalających na prowadzenie racjonalnej polityki zdrowotnej.

Oryginalność/wartość: do dorobku zawartego w publikacjach przedłożony artykuł dodaje konieczność uwzględnienia odpowiednio wybranych KPI analizujących środowisko makroekonomiczne do funkcjonowania szpitali.

Słowa kluczowe: skuteczność kliniczna, efektywność kosztowa, ochrona zdrowia oparta na wartości, wydatki na ochronę zdrowia, stan zdrowia, kluczowe wskaźniki działalności.

1. Introduction

The healthcare financial situation is difficult in all European countries. Consequently, the availability and quality of health services are worse than potentially possible. There are many reasons behind it, such as the aging of the population, costs of progress in medical science and the growing expectations of patients. Little has been said about an equally important reason, i.e. the waste of human, physical and financial capital; so, dispensable expenses are ignored. The European Commission emphasizes the importance of cost-effectiveness and the related clinical effectiveness; according to OECD, it may be estimated at as much as 34% of all the expenditure incurred (Defining value in “Value Based Healthcare”, 2019, p. 4). The concept of Value Based Healthcare is a way to help solve the problem of waste and scarcity of resources. A discussion on the possibility of exactly this kind reform of the healthcare system is also held in Poland.

Actually, all over the world, health expenditures continue to rise at an alarming rate. They outpace the growth of national economies. Presumably, the solution is obvious: to get rid of all the inefficiencies. Unfortunately, the current focus on costs and volumes is only misleading and may eventu-

ally lead to a dead end. A completely new approach is needed as healthcare systems should be reoriented to more universal indicators. Since this problem is a challenge for all decision-makers and researchers involved in healthcare, the purpose of this article is to explore the possibility of using VBHC as a way to improve the healthcare system operation. A specific objective is to examine what types of indicators should be used in making decisions about the healthcare operation. Based on the literature review and the experience of selected countries which began a trial introduction of VBHC, an attempt was made to determine the usefulness of this method as a way to reform the healthcare system.

2. Overview of the Literature

An approach to value-based healthcare was proposed by Porter (Porter & Teisberg, 2006). It aroused great interest of medical doctors as well as economists. Many articles and reports are devoted to the theoretical part, especially the measures to be used for assessment and comparison. There are also many publications, primarily reports, on the experience of each country introducing VBHC as well as the conclusions drawn by them. The most important articles and reports, from the point of view of the goals of this article, are presented in the theoretical part of the article and are also included in the References.

3. Research Methodology

The problem of economic efficiency and clinical effectiveness, i.e. the availability of health services and their quality, emerged decades ago. As the reforms of healthcare were not successful, a new approach of VBHC was created. Due to the scope of the issue and the corresponding measures, this approach is multifaceted. Therefore, primarily reports and articles on selected aspects are published. The theoretical part presents a review of selected articles and reports devoted mainly to numerical indicators, i.e. neutral measures of the most important factors affecting the quality and availability of medical services.

The second section of the article describes the countries in which the VBHC concept was implemented and real benefits were generated in different healthcare specialties. So as to depict the variety of views on VBHC, the case study method, included in the most frequently used qualitative methodology in the educational research, was used in the article. In the literature, there are different perspectives expressed by some prominent methodologists, namely Robert Yin, Sharan Merriam or Robert Stake, on the application of the case study method in the field of educational

research. Their methodological solutions have their own internal protocols and significantly affect educational researchers' decisions on the case study design. There is no way to establish an indisputably best view; for this article, the Stake approach was chosen to demonstrate the perspectives and views on VBHC.

4. Value Based Healthcare Concept

The amount of health expenditure is influenced by many factors and associated with many problems, such as the soft budget constraint described in many articles (Kornai, 2009; Crivelli et al., 2010; Levaggi et al., 2005).

One of the biggest challenges decision-makers face, not only in healthcare, is a growing level of costs and expenditures (Przywara, 2010; OECD, 2010; Street et al., 2010).

Population aging is one of the main factors behind increases in the health spending (European Commission, 2018). In addition, the development of medical science is very expensive, and patients are increasingly aware and demanding. The problem of money shortage is particularly important due to the inefficiency of using all resources by providers (Joumard, André, & Nicq, 2010). One of the reasons behind this inefficiency is inadequate formulas for reimbursing healthcare providers (Alternative Provider Payment Methods, 1999). What is also important is the lack of controls regarding the operation of hospitals and other institutions.

Historically, it can be stated that since the beginning of the 1970s, both GDP and THE (total health expenditure) have increased in the OECD member countries. However, the rate of THE growth was faster than the rate of GDP growth, which led to a shortage of money in healthcare, especially in hospitals (Park, Braun, Carrin, & Evans, 2007).

Striving to solve the problem of growing money shortages, the possibility of basing healthcare on the VBHC concept was considered. It is so important because it stems from the pursuit of clinical effectiveness without wasting resources, so it focuses on the patient and combines the interests of doctors and economists, medical workers and hospital managers. Figure 1 shows the presumed sources of waste of all types of resources in healthcare.

In the pursuit of clinical effectiveness, the idea of "there is more than medicine" appeared (Defining value in "Value Based Healthcare", 2019, p. 44). The guarantee of cooperation between all stakeholders will help solve the problem presented in Figure 2. The number of health services must result from the costs and benefits of those providing these services.

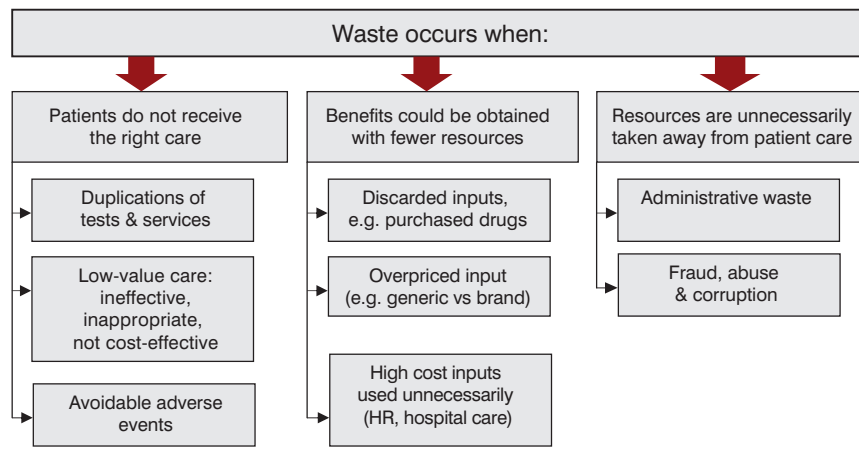


Fig. 1. Identification of wasteful clinical care as well as operational and governance-related waste. Source: Adapted from OECD (2017), *Tackling Wasteful Spending on Health*, <http://dx.doi.org/10.1787/9789264266414-en>.

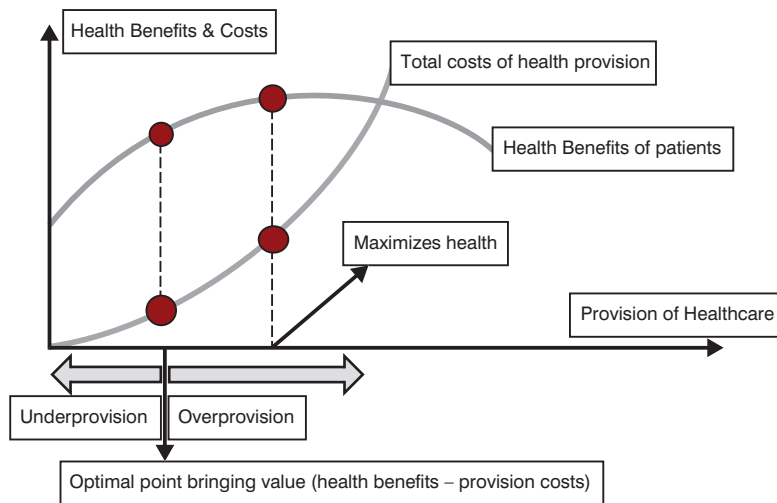


Fig. 2. Relationship between healthcare provision and health costs & benefits of this provision. Source: Donabedian, A., *Explorations in Quality Assessment and Monitoring. The Definition of Quality and Approaches to Its Assessment (Vol. 1)*, ed. H.A. Press 1980.

However, the optimization of the quantity and quality of health services is not possible without knowing various types of measures. VBHC cannot be created without indicators and results of quantitative and qualitative analyses (characterizing organization, management, financing, investing and overall healthcare operation) (Kaplan & Norton, 1995). Therefore, it is necessary to create a set of the most important key performance indicators (KPIs) (Parmenter, 2010). Thanks to them, it is possible to make the necessary measurements, control the functioning and strategic and operational management of all healthcare providers as well as the system as a whole. Of course, it should be done in accordance with the adopted objectives and standards (Arah et al., 2003). The structure of KPIs desirable for healthcare focused on the patients and their health results is shown in Figure 3.

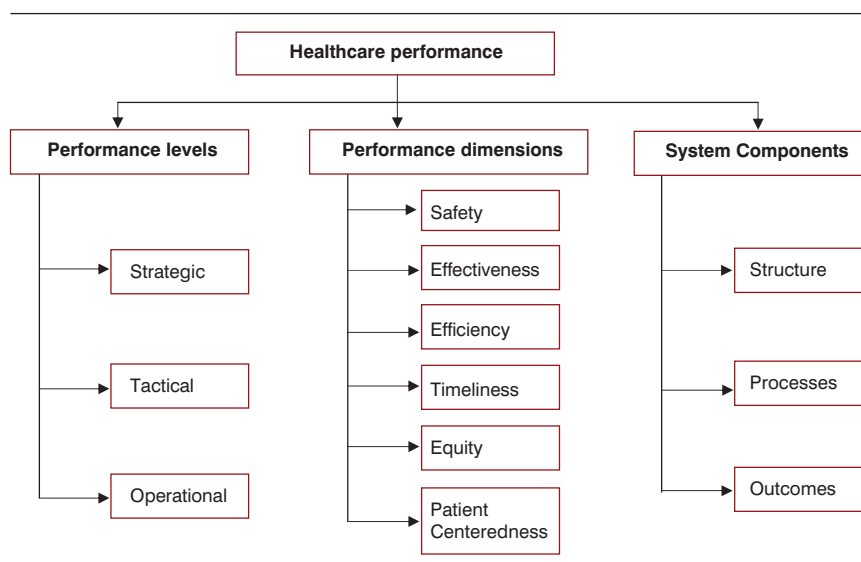


Fig. 3. Relationship between healthcare provision and health costs & benefits of this provision. Source: Khalifa M., P. Khalid, *Developing Strategic Health Care Key Performance Indicators: A Case Study on a Tertiary Care Hospitals*, *Procedia Computer Science* 63 (2015) pp. 45–466, p. 461.

The most important KPIs should include three levels of assessment of the operation of service providers, i.e. strategic, tactical and operational (Eckerson, 2009). The areas of healthcare operation to be assessed on the basis of the indicators include patient health safety, clinical effectiveness of treatment, resource efficiency, appropriate time to carry out the treatment process, focus on improving the health status and patient satisfaction, as well as equal access for all patients and to all types benefits. In addition, KPIs should assess three components of the treatment process. Firstly,

a structure representing treatment determinants (e.g. hospital, staff, equipment, financing); secondly, processes that reflect all relationships between healthcare providers and patients during treatment; and thirdly, treatment results revealing its impact on the health of the individual and society (Gilbert, 2014).

The European Commission experts proposed that VBHC should be defined as a comprehensive concept built on 4 pillars: 1/ personal value (appropriate care to achieve patients' personal goals); 2/ technical value (achievement of best possible outcomes with available resources); 3/ allocative value (equitable resource distribution across all patient groups); 4/ social value (contribution of healthcare to social participation and connectedness) (Defining value in "Value Based Healthcare", 2019, p. 69).

Porter and Lee (2013) described the next steps to introduce VBHC (Figure 4). The order of these steps seems debatable.

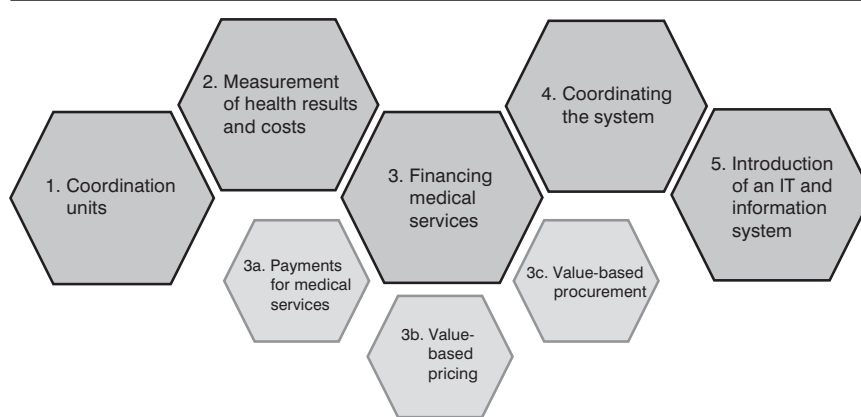


Fig. 4. Elements of the VBHC coordination program. Source: Based on Porter, M. E., & Lee, T. H. (2013), *The Strategy That Will Fix Health Care*. Harvard Business Review.

The introduction of integrated healthcare is one of the most important steps. In addition, the factor determining the amount of expenditure and the state of health of patients is the method of reimbursement of the incurred costs to healthcare providers, as it is an incentive for medical staff to make decisions. Therefore, with the VBHC approach, reimbursement incentives should be formulated in such a way as to allow for the achievement of the best relation between the costs incurred for treatment and the results of the treatment.

A prerequisite for the introduction of VBHC is the creation of medical registers¹ and databases for healthcare. These data should be transparent and have a sufficiently wide range and display a high quality. Simultaneously, some attention should be paid to the costs as well as improved

health outcomes. In addition, only by analyzing data can one control the activities of service providers and the operation of the system as well as draw conclusions and submit recommendations. It is only possible thanks to the interdisciplinary cooperation of many professional environments, such as medical doctors and other staff, medical associations, managers of all healthcare levels and above all hospitals, government institutions, ministries, public and private healthcare payers, pharmaceutical industry, biotechnology and producers of medical equipment, academic circles representing broadly understood medical, economic and legal sciences. The mechanism of achieving value improvement in healthcare is presented in Figure 5.

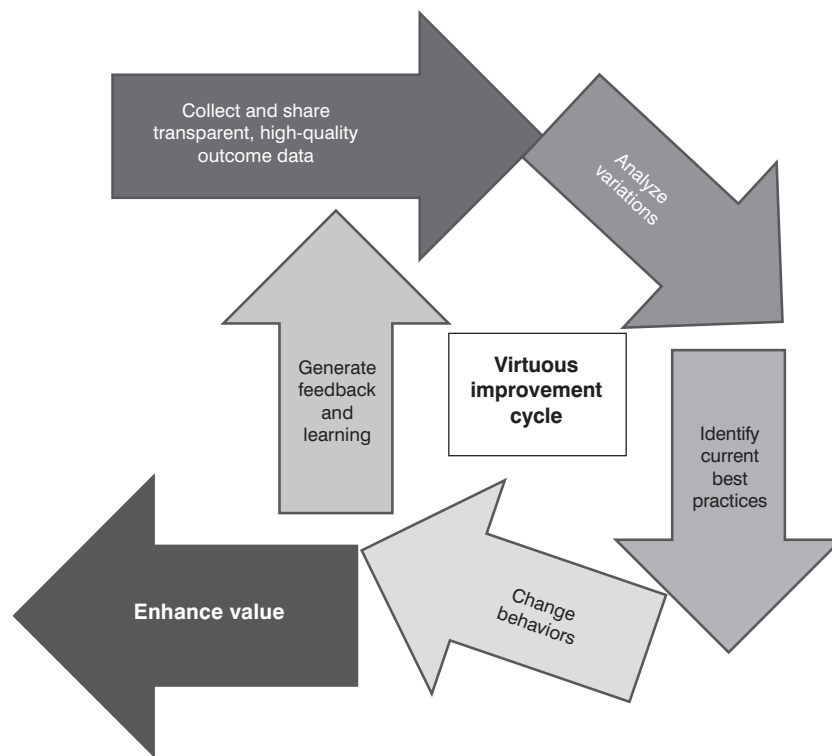


Fig. 5. VBHR delivers improved health outcomes in relation to the level of cost. Source: Adapted from *Progress Toward Value Based Health Care – Lessons From 12 Countries*, The Boston Consulting Group, 2012, p. 5.

The most important characteristics and transmission mechanisms discussed above show that the introduction of VBHC is a difficult and time-consuming task. And many preconditions must be met. However, the benefits achieved serve all healthcare stakeholders.

5. Research Results – VBHC in Different European Countries

The need for making value more significant in healthcare investment has never been more important than today. The world population is aging more quickly than ever before. The growing number of people suffering from many chronic diseases forces governments to curb the growing spending on healthcare. Financial pressure as well as the need for more emphasis on patient-centered care have raised the value of Value-Based Healthcare (VBHC), especially in European healthcare systems.

The VBHC concept was implemented quite early in those countries where it was noticed that wherever systematic data are available, there is very high variability in treatment outcomes. This was noticed both in various diseases and in the results of all types of treatment. It was realized that value is the only goal shared by the interests of all stakeholders in the healthcare system and that improving value may prove to be the only true solution.

The key issue was to redesign the healthcare system so as to increase the patient value, as value is generated throughout the entire healthcare cycle, not as previously thought at the level of the hospital, place of care, specialty, specific event or medical intervention only. Based on that, the patient value is defined as the proportion of total health outcomes which are relevant to the patient's state of health in relation to the total cost of all necessary services throughout the entire care cycle. Unfortunately, the difficulties in assessing the success of countries in implementing VBHC result primarily in the lack of acceptance of a single consistent definition.

The Economist Intelligence Unit (EIU) examined health systems in different countries to determine their alignment with the VBHC model. EIU defined value-based healthcare as the creation and operation of a health system which explicitly prioritizes health outcomes significant to patients in relation to the cost of achieving these outcomes. They described the most advanced markets, showing how VBHC had already been implemented and what the key enablers were. From a methodological perspective, the Stake case study approach was chosen to reveal the divergence and completeness in the implementation in different countries and specialties.

Stake views cases as an integrated system and argues for a flexible design which allows researchers to make major changes even after they proceed from design to research. Stake suggests that the course of study cannot be charted in advance and he recommends flexibility in terms of case study design as he adopted the notion of "progressive focusing". In this article, Sweden, Germany and Great Britain were chosen as the countries with the most advanced healthcare systems in Europe. Considering the interrelationship between VBHC and the country context, the data coming from the existing documentation and reports were collected and analyzed simultaneously.

5.1. Sweden

Sweden, which has a very comprehensive and egalitarian healthcare system, has been a leader in implementing VBHC since the very beginning. The main factors enabling the rapid implementation of this concept included a highly developed system of disease registers, reimbursement based on the results of specialist care and a decentralized healthcare system in favor of experimentation at the local level. The provision of healthcare is under the responsibility of 21 regions of Sweden, which pays for the majority of healthcare services. It gives local authorities a number of opportunities to carry out pilot reforms in a smaller population. The costs are mainly financed from county taxes. As a result, regions are free to legally organize the healthcare provision (Koehring, 2019).

It is Sweden that has many elements of the system allowing for the achievement of specific patient results which, apart from costs, are important for understanding the value for the patient. The access to high-quality data is one of the key elements in assessing the value of healthcare and pioneering Swedish qualitative health registers and digital health records provide significant opportunities to compile and share real world evidence (RWE) on health outcomes. The Swedish healthcare system is unique in this respect as some registers have been collecting data for over 20 years (The Economist Intelligence Unit, 2016).

The registers provide quality indicators designed to enable further improvement and evaluation of healthcare provision. Individual registers have their own publications, but also publish data on the 'Health in numbers' (Vården and siffror) portal of the Swedish Association of Local Authorities and Regions (SALAR) to provide publicly presented health quality indicators. The existence of Swedish registers positively affects the setting of standards in the clinical approach outside Sweden, as for example the National Hip Arthroplasty Register helps to set the best international practices (Swedish National Quality Registries..., 2016).

Against the background of massive data availability, digitization is progressing significantly in the Swedish healthcare system, and Sweden is called the "data mine in healthcare" thanks to disease registers, electronic registers and large amounts of real world data. In Sweden, an attempt was made to improve the coordination of primary care within the Primary Care Quality Sweden project, which includes about 150 quality measures and technical methods for automatic data collection so that healthcare providers do not have to spend time creating additional documentation and making it available at both local and national level. The data are collected in real time, based on evidence and updated every year (Webster, 2014).

This system currently covers half of the 1,200 Swedish medical entities and allows for answering questions such as what percentage of patients with atrial fibrillation are not treated with anticoagulants or which patients

with a chronic disease have not been inspected in the last 18 months. Sweden is already using bundled payment systems in various regions, where service providers are paid for a full care period of one year or longer, which makes them fully responsible for the care cycle, including possible complications. The package price is adjusted to patient's requirements and the expected cost for each, based on demographic factors (European Forum for Primary Care, 2015).

The OrthoChoice model was one of the first examples of bundled payments in Sweden. The service providers receive reimbursement based on results and undergo strict health monitoring as part of their health services. Launched in all major hospitals and 3 private specialized orthopedic centers in Stockholm County in 2009, OrthoChoice included knee and hip replacement surgeries and was eventually expanded to include spinal surgery. Under the terms of the program, a small portion of the bundled payment, about 3.2%, is withheld and paid retrospectively only if the service provider reaches the previously agreed final objectives. In the first 2 years of the program, the number of complications and reoperations decreased by about 20% compared to the control group using traditional reimbursement models, with the total cost per patient also on the decline (Clawson et al., 2014).

The management of the Karolinska University Hospital decided in 2015 to reorganize the healthcare provision model. They decided to shift from a traditional hospital structure based on wards and medical specialties to a model based on the patient's path and illness. In the new structure of the hospital, breast cancer was one separate path of the patient, in which surgeons, oncologists and radiologists worked closely together. This involved a change of command, where the oncologist manages the team of surgeons who had to adapt to having a boss from outside a team of experienced surgeons (Nilsson et al., 2017).

5.2. Germany

Like other European countries, Germany guarantees healthcare to all citizens, but unlike many of its neighbors, who finance health insurance from general taxes, most Germans are covered by the statutory health insurance system encompassing 134 sickness funds financed both from employees' salary taxes and by employers. Only 11% of Germans are covered by private health insurance. The German health insurance system comes from Bismarck's social legislation of the late 19th century, and Germany has one of the oldest national healthcare systems in Europe (Koehring, 2015).

Over the past 20 years, they have implemented appropriate system improvements to assess medical technologies, new drugs, treatment methods and healthcare pathways. Despite the leading role in these areas, the German healthcare system focused on health outcomes relatively late. One of the ways in which the German authorities want to improve the health-

care quality is to increase the minimum number of treatments required at the facility to create centralized healthcare units specializing in specific diseases or procedures.

The introduction of diagnosis-related group (DRG) or the bundled payment system was aimed at reducing some costs by establishing a fixed fee for individual categories of treatment irrespective of the length of stay (previously hospitals were paid on the basis of a daily allowance) as well as referring care to more specialized centers. Under the DRG system, hospitals providing care below a certain value, based on evidence, do not receive full payment for some diseases. Some efforts have also been made to introduce quality related incentives for outpatient clinics through disease management programs (Charlesworth et al., 2012).

The natural next step is to implement the Pay-for-Results (PFR) model to encourage high-quality results and enable the assessment of healthcare value. A special institute for quality monitoring, IQTIG is to help in the introduction of such a system. To a limited extent, the elements of the Pay-for-Results system are already built into the current DRG system. When a patient undergoes hip surgery and is then re-admitted to the hospital within 30 days of the day of discharge from it, there is no additional payment for the doctor or hospital (Obermann et al., 2013).

Despite many problems Germany is facing, the Martini-Klinik, which is a specialist university clinic, is an excellent example of a high-level specialist center which has successfully implemented the concept of value-based healthcare. The hospital, which specializes in prostate surgery, has been collecting data on patient results for almost 30 years, which makes it unique in Europe. By ordering patients to complete a detailed pre-and post-operative questionnaire, the Martini-Klinik has gathered a substantial set of real data which help doctors adjust their surgical methods and reduce postoperative complications (Porter et al., 2014).

Radical prostatectomies are characterized by particularly high rates of urinary incontinence and impotence after surgery, the side effects which can drastically reduce the patient's quality of life. In 1992, the clinic began to measure oncological and functional results after surgery, asking patients to complete a survey of 70 questions before surgery, covering their quality of life, sexual and urinary functions. Questions are repeated a week after surgery, 3 months later, and then every year, with a response rate over 90%. In some cases, the clinic followed patients for two decades.

The data are collected, stored and analyzed by an independent statistician, and each surgeon participates in two annual meetings to analyze the results. Having such comprehensive data helps surgeons modify their procedures when they perform poorly in some patients. After noticing that one member of the team had particularly low urinary incontinence rates in his patients after surgery, his colleagues found out that those patients lost the highest amounts of preserved sphincter muscle during surgery. By

following the surgeon's instructions and maintaining the specified sphincter length for each patient, all the Martini-Klinik physicians were able to double the initial incontinence results in patients by achieving a clinic incontinence rate of less than 5% in patients with prostatectomy, compared to 8–10% in 2007, before modifying the procedure. Apparently, in other places in Germany this ratio is currently at the level of 20% (Koehring, 2015).

The Martini-Klinik surgeons have a great desire to learn from each other and undergo mutual evaluation, which seems to be in conflict with the stereotype of the surgeon's profession, often considered one of the more competitive fields of medicine. Doctors at the clinic are aware that the joint success benefits everyone. The Martini-Klinik employs a team of six full-time staff to enter data, which is an expensive model. However, it is necessary as it proves to be difficult to force doctors to save all results, and too tempting to share only part of their patients' results.

5.3. Great Britain

Great Britain has long been belonged to the European avant-garde wanting to expand the use of value-based healthcare. The NHS system, founded in 1948 as one of the first universal healthcare systems, is financed from general taxes, and including social security contributions. This is probably the most centralized system in Europe, financed from public funds and supported mainly by the public sector, although market reforms have systematically introduced private suppliers in England over the last few decades (Nuffield Trust and Institute for Fiscal Studies, 2013).

In England, there have been experiments in recent years with different payment for results models, as well as efforts to identify and eliminate inefficient options for the delivery of care and treatment. However, the years of structural reforms have left a more fragmented healthcare system, which makes it unclear to what extent the country can actually increase the value for money, even if it can identify that value.

In the UK, the most influential body in the health technology assessment process is the NICE institute founded in 1999, playing an important role in technology assessment by providing drug approval recommendations as well as evidence-based guidelines to improve community health and the cost-effectiveness of new treatments. Many European decision-makers chose the British NICE institute as a model benchmark when implementing their national solutions. NICE operates according to the profitability threshold measured in quality-adjusted years of life (QALY) and generally refuses to recommend drugs that cost more than £20–30 k for one QALY. The NHS, by law, must finance NICE approved drugs within 90 days of the published decision.

Over the past decades, the British policy makers have introduced a number of performance payment methods in various parts of the NHS, includ-

ing the Quality and Outcome Framework (QOF) in primary care or Best Practice Tariff (BPT) in hospital care to encourage the use of evidence-based methods and, where possible, reduce the use of unnecessary costly interventions. The QOF is an annual reward and incentive program that assesses the results of family doctor performance in England. Introduced as part of the contract with family physicians in 2004, it encourages the provision of high-quality care and standardization in the provision of primary care for chronic diseases such as diabetes and asthma, public health challenges such as smoking and obesity, and prevention like blood pressure tests (Koehring, 2016).

In addition to these measures, BPTs were introduced considering both clinical care and cost effectiveness. Tariffs were developed to help NHS increase the efficiency and improve quality by reducing changes in the provision of care under the same services. The system included individual tariffs for each service area. However, it was difficult to clearly assess the success of these performance payment measurements (Department of Health, 2011).

A dozen of different studies were conducted and many excessive therapeutic interventions were identified. They could be significantly reduced without adversely affecting the UK population. In addition, some projects focused on identifying the abuse of interventions which are effective but have low or negative value when used in excess. Clinicians are unaware that they overuse some therapeutic interventions, as demonstrated by Jack Wennberg in his classic study. These studies led to the publication of the concept of unjustified variation, i.e. variability that cannot be explained by the needs or preferences of the population.

One of the programs attempting to address inequalities in healthcare in England is the NHC RightCare program aimed at value. Getting rid of unjustified variation is the means to achieve it. The first phase of the program is based on assessing where the largest areas of variation exist, whether in diabetes, asthma or other health problems. The second phase is determining what needs to be changed to transform the suboptimal results of patients to fully optimal. Finally, the third phase of the process begins with diagnosis and is aimed at reaching consensus throughout the entire system by influencing changes in practices (NHS RightCare, 2018).

The British healthcare system, and in particular NHS England, has been experimenting with value measurement in health technology assessment for over a decade. However, it remains uncertain whether this process has left it in a better position compared with other European countries where the concepts of value are even less developed. Healthcare reformers in the UK have also sought to remedy sharp differences in healthcare outcomes across the country by implementing innovative ideas such as the NHS RightCare program.

6. Conclusions

Clinical and cost effectiveness in healthcare in European countries forces people to take action to solve the existing problems. The changes which will work in both directions should be introduced: they should enable patients to improve their health and they should reduce the costs of obtaining this improvement at the same time. In order to be able to introduce VBHC, one needs to prepare the ground for this. It requires many time-consuming activities. First of all, a set of KPIs should be developed to provide indicators for making rational decisions. The significance of such a set is significant as it contains a lot of factors determining the results to be obtained.

Knowing the above-mentioned conditions and problems associated with the introduction of VBHC into the healthcare system as a research value, one should consider the presentation of the conclusions resulting from the review of selected literature. Since the most important criterion adopted in the article is the efficiency aspect of the introduction of VBHC, the presentation of the course of reasoning combining benefits and costs, as well as the practical use of such an approach is a value added to the contribution to the development of the discipline. Moreover, the article emphasizes the need to construct KPIs as an indispensable basis for using VBHC in practice. This is a contribution to the development of the most important mainstream analysis created and used for quantitative tools.

It is invaluable to familiarize with the experience of countries which have already begun introducing VBHC. This article shows that value-based approaches are implemented incrementally and at varying pace across the European healthcare systems. Aligning a health system with a VBHC model also represents a tremendous shift in the stakeholders culture. Healthcare in each country faces different conditions and therefore one cannot mechanically implement the recommendations resulting from conclusions made in other countries. Certainly, they should be treated as a certain contribution.

The case study analysis of the three different European markets presented in this paper was aimed to depict what was successful in each of them and what could be improved in order to understand how to implement improvement initiatives in the context of VBHC. The analysis was intended to explore the implementation process in different medicine specialties.

The situation in healthcare systems requires immediate changes, of which VBHC seems to be the best solution. However, due to the complexity of medical problems and their complicated connection with economic conditions (e.g., financial, management, macroeconomic), it reveals research limitations. The largest of these is the lack of databases of medical records as well as databases for the healthcare system and for individual stakeholders.

Another research limitation, which is also a research challenge, is the initial period of work on the solutions, and above all KPIs enabling the intro-

duction of VBHC into practice. Another research limitation is the diversity of economic and healthcare conditions in individual countries. This is a particular impediment when exchanging experience between individual countries. Along with ongoing analytical and quantitative analyses, new research questions and research limitations appear.

The biggest limitation of the above research is that only qualitative data are presented, and it causes problems with comparison among countries because of the complexity of the presented examples. Unfortunately, quantitative data on controlled implementations or access to homogenic cases for cross-case analysis are very rare. In each presented market, there are different elements of VBHC implementation; however, they are complementary.

At the same time, research limitations appear as further research lines, as they should be properly handled as to be able to be put VBHC into practice. At the current stage of research, it seems that the most important research challenge is to create the right sets of KPIs that present a comprehensive picture of both the clinical and economic operation of the healthcare system. KPIs should cover all types of conditions affecting the quality and availability of health services.

For further investigation of that topic, the authors would like to focus more on quantitative comparisons among countries in the same specialty to be able to answer more detailed questions about the potential savings and effectiveness with regard to the implementation of the VBHC approach.

Finally, two well-known quotes from Peter F. Drucker's² achievements can be cited: *If you can't measure it, you can't manage it* and *if you can't measure it, you can't improve it*. In addition, one should quote a statement from the achievements of William E. Deming³: *Without data you're just another person with an opinion*. They confirm the need to introduce measures into the process of making rational decisions in the healthcare system.

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Endnotes

- ¹ For example, the first registers appeared in Europe and the USA in the 1960s.
- ² Peter F. Drucker (1909–2005) was a management expert, academic lecturer, researcher of organization and management processes in corporations and non-profit organizations. He was recognized as one of the greatest thinkers and management theorists in the 20th century.
- ³ William E. Deming (1900–1993) was an American statistician, he was the author of fourteen Deming principles (introducing a new quality philosophy into the organization) and the Deming cycle (a scheme of continuous improvement). He was the first to deal with statistical process control.

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